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DOW CORNING CORPORATION
PATENT DEPARTMENT MAIL 001232
MIDLAND MI 48686-0994

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EXAMINER
MILSTEAD, M

ART UNIT	PAPER NUMBER
1712	4

DATE MAILED: 09/28/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/862,045

Applicant(s)
Takuman, O.

Examiner
Mark Milstead

Group Art Unit
1712



☒ Responsive to communication(s) filed on May 5, 1997

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-16 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-16 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1712

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it contains two paragraphs.

Correction is required. See MPEP § 608.01(b).

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The format for definition of R is unclear. The format, "R is selected from substituted and unsubstituted . . . , " appears to be inconsistent since the selection would suggest an alternative choice, whereas "and" suggests the cumulative. Examiner suggests replacing "and" with "or."

4. The disclosure is objected to because of the following informalities: Applicant has used an informal symbol (%) to represent the word "percent" on page 11, line 17 of the disclosure. The written word "percent" is more appropriate for the indicated sentence.

Appropriate correction is required.

Art Unit: 1712

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1, 2, 4, 5, 10, 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kunieda.

As for claim 1, Kunieda, in column 2, lines 18-45, teaches a composition of 100 parts by weight organopolysiloxane represented by the formula $R_aSiO_{(4-a)/2}$, where R is a substituted or unsubstituted monovalent hydrocarbon and the a value is 1.98 to 2.02; 15 to 300 parts by weight of aluminum hydroxide; 1-20 parts by weight of an organosilane; and a curing agent made up of an organoperoxide.

As for claim 2, Kunieda, in column 2, lines 65-69, teaches that the viscosity for the organopolysiloxane gum should be is 1,000,000 centipoise at 25°C or higher.

As for claim 4, Kunieda, in column 3, lines 22-25, teaches average particle diameter of aluminum hydroxide is smaller than 5 μm , preferably smaller than 1 μm .

Art Unit: 1712

As for claim 5, Kunieda, in column 3, lines 33-35, teaches that the "... essential component for improving the resistance to weather, to tracking, and to erosion ..." is an organosilane or organosiloxane oligomer. Kunieda teaches the addition of an organosilane to the composition that includes aluminum hydroxide. Applicant has stated in the disclosure, on page 5, lines 23-26, that the components can be added all together and the aluminum hydroxide would be considered treated with the organosilane. Thus, Kunieda teaches an organosilane surface treated aluminum hydroxide.

As for claim 10, Kunieda, in column 3, lines 65-67, teaches that amount of organosilane to be used is in the range of 1 to 20 parts by used on 100 part by weight of the polyorganosiloxane gum.

As for claim 11, Kunieda, in column 4, lines 3-10, teaches that the curing agent of choice is an organoperoxide.

As for claim 13 and 14, Kunieda, in column 3, lines 1-19, teaches that a finely divided silica is used in the range of 10 to 100, parts by weight, based on 100 parts by weight of the polyorganosiloxane gum. Kunieda specifies a choice of "fumed silica of ultra-fine particles smaller than 50 μm in particle diameter and larger than 100 m^2/g in specific surface area is preferred."

7. Claims 1 to 6, 8 to 10 and 12 to 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Azechi.

Art Unit: 1712

As for claim 1, Azechi, in column 2, lines 34-47, teaches a 100 parts by weight organopolysiloxane having a least two aliphatic unsaturated hydrocarbon groups each attached to a silicon atom in a molecule; about 50 to about 300 parts by weight of surface treated aluminum hydroxide; and a curing agent made up of an organohydrogenpolysiloxane and a platinum catalyst. The formula Azechi uses is slightly different, $R_a^1 R_b^2 SiO_{(4-a-b)/2}$. However, Applicant's R_a is equivalent to Azechi's $R_{(a+b)}$ and in column 3, lines 24-27, Azechi teaches a range of $1.5 \leq a+b \leq 2.5$.

As for claim 2, Azechi, in column 3, lines 32-37, teaches that the more desirable viscosity for the organopolysiloxane is about 100 to about 1,000,000 centipoise at 25°C.

As for claim 3, Azechi, in column 3, lines 40-56, teaches, through a depicted structure, a vinyl dimethyl siloxy-endblocked polydimethylsiloxane and vinyl dimethyl siloxy-endblocked dimethylsiloxane-vinyl methylsiloxane copolymer.

As for claim 4, Azechi, in column 4, lines 21-25, teaches that the aluminum hydroxide is in particulate form having a mean particle size up to 10 μm , specifically Azechi teaches the range of 0.5 to 9 μm .

As for claims 5, 6, 8 and 9, Azechi, in column 4, lines 26-48, teaches that the aluminum hydroxide is treated with silanes and silazanes. The specific relevant organosilane taught is vinyltrimethoxysilane. The specific relevant organosilazanes taught are hexamethyldisilazane and divinyltetramethyldisilazane.

Art Unit: 1712

As for claim 10, Azechi, in column 5, lines 24-30, teaches that "100 parts by weight of aluminum hydroxide is preferably treated with about 1 to 50 parts by weight, especially about 5 to 30 parts by weight of the surface treating agent."

As for claim 12, Azechi, in column 5, lines 52-63, teaches an organohydrogenpolysiloxane which is a crosslinking agent for silicone rubber compositions, when used in the presence of a platinum group catalyst. Azechi further explains that the organohydrogenpolysiloxane "... should have at least two hydrogens atoms, preferably at least three hydrogen atoms each attached to a silicon atom in a molecule."

As for claim 13 and 14, Azechi, in column 4, lines 5-12, teaches finely divided silica, specifically "fumed silica" with a specific surface area of more than about 50 m²/g, is blended in an amount of about 1 to about 100 parts by weight per 100 parts by weight of the polyorganosiloxane.

As for claim 15, Azechi, as discussed above teaches treated aluminum hydroxide treated with vinyltrimethoxysilane.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1712

9. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunieda or Azechi in view of Onishi.

Kunieda or Azechi teach all the limitation of the claims, as discussed above, except the use of methyltrimethoxysilane to surface treat aluminum hydroxide. Onishi, in column 6, lines 64-67 and in column 7, lines 1-6, teaches is standard practice to treat inorganic fillers such as aluminum hydroxide when used in silicone rubber compositions. Moreover, the aluminum hydroxide is treated with an organoalkoxysilane such as methyltrimethoxysilane. One skilled in the art at the time of the invention would have employed the use of methyltrimethoxysilane to surface treat aluminum hydroxide in a silicone rubber composition. The motivation for the treatment of the aluminum hydroxide is to make the aluminum hydroxide component more miscible with the polyorganosiloxane composition.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark W. Milstead whose telephone number is (703) 305-0642.



Robert Dawson
Supervisory Patent Examiner
Technology Center 1700

Mark W. Milstead *MWM*

September 23, 1998